

AMENDMENTS TO THE CLAIMS

Please replace the pending claims with the following claim listing:

1. **(Currently Amended)** A wavelength multiplex transmission system having a transmission apparatus and a receiving apparatus connected via an optical transmission line to transmit an input signal, wherein:

the transmission apparatus is configured to convert differential signals of the input signal to separate optical signals to transmit to the optical transmission line; and

the receiving apparatus is configured to receive the separate optical signals from the optical transmission line to reproduce the differential signals.

2. **(Currently Amended)** The wavelength multiplex transmission system according to claim 1, wherein the receiving apparatus further combines the reproduced differential signals to reproduce the input signal.

3. **(Previously Presented)** The wavelength multiplex transmission system according to claim 1, wherein the receiving apparatus adjusts a time difference between the reproduced differential signals.

4. **(Currently Amended)** A wavelength multiplex transmission system having a transmission apparatus and a receiving apparatus connected via an optical transmission line, wherein: the transmission apparatus ~~comprises;~~ comprises:

(N+M) optical transmitters (where N is an integer of 2 or more and M is an integer from 1 to N) for transmitting a plurality of input signals as optical signals with different wavelengths,

M differential dividers for differentially dividing M input signals out of the plurality of input signals, respectively, and inputting the differentially divided signals into 2×M optical transmitters out of the (N+M) optical transmitters, respectively, and a wavelength multiplex filter for wavelength multiplexing and outputting the (N+M) optical signals from the (N+M) optical transmitters, and wherein:

the receiving apparatus ~~comprises;~~ comprises:

a wavelength separation filter for separating the wavelength multiplexed optical signals to output (N+M) optical signals;

(N+M) optical receivers for receiving the (N+M) optical signals from the wavelength separation filter, respectively, to output (N+M) output signals; and

M differential combiners, each differentially combining the output signals from the two optical receivers receiving a pair of optical signals which have been differentially divided and transmitted, out of the (N+M) optical receivers, to output one signal.

5. **(Currently Amended)** The wavelength multiplex transmission system according to claim 4, wherein the transmission apparatus ~~inputs~~ has two corresponding differential signals from one differential divider ~~into~~ as inputs to two optical transmitters, respectively, and transmits ~~them~~ the two differential signals as separate optical signals with adjacent wavelengths.

6. **(Previously Presented)** The wavelength multiplex transmission system according to claim 4, wherein the receiving apparatus is further provided with a delay time controller for adjusting delay time difference between a pair of optical signals on the optical transmission line, at the preceding stage of the differential combiner.

7. **(Currently Amended)** A transmission apparatus for transmitting optical signals, comprising:

optical conversion means for converting differential signals of an input signal to separate optical signals; and

optical transmission means for transmitting the converted optical signals.

8. **(Currently Amended)** The transmission apparatus according to claim 7, wherein:

the optical conversion means converts the differential signals to separate optical signals with different wavelengths; and

the optical transmission means multiplexes the separate optical signals with different wavelengths to transmit.

9. **(Currently Amended)** The transmission apparatus according to claim 7, further comprising differential divider means for dividing ~~[[an]]~~ the input signal to the differential signals.

10. **(Currently Amended)** A transmission apparatus comprising:

(N+M) optical transmitters (where N is an integer of 2 or more and M is an integer from 1 to N) for transmitting a plurality of input signals as optical signals with different wavelengths;

M differential dividers for differentially dividing M input signals out of the plurality of input signals, respectively, and inputting the differentially divided signals into 2×M optical transmitters out of the (N+M) optical transmitters, respectively; and

a wavelength multiplex filter for wavelength multiplexing the (N+M) optical signals from the (N+M) optical transmitters to output.

11. **(Currently Amended)** The transmission apparatus according to claim 10, ~~inputting~~ having two corresponding differential signals from one differential divider ~~into~~ as inputs to two optical transmitters, respectively, and transmitting ~~them~~ the two differential signals as separate optical signals with adjacent wavelengths.

12. **(Currently Amended)** A receiving apparatus for receiving optical signals including differential signals of a signal, comprising:

optical receiving means for receiving the optical signals; and

optical conversion means for reproducing the differential signals from the optical signals.

13. **(Currently Amended)** The receiving apparatus according to claim 12, wherein:

the differential signals are wavelength-multiplexed as separate optical signals with different wavelengths; and

the optical conversion means reproduces the differential signals from the separate optical signals ~~with different wavelengths~~.

14. **(Previously Presented)** The receiving apparatus according to claim 12, further comprising differential combining means for combining the reproduced differential signals.

15. **(Original)** The receiving apparatus according to claim 14, further comprising time difference control means for adjusting time difference between the reproduced differential signals.

16. **(Currently Amended)** A receiving apparatus comprising:

a wavelength separation filter for separating a wavelength multiplexed optical signal to output $(N+M)$ optical signals (where N is an integer of 2 or more and M is an integer from 1 to N);

$(N+M)$ optical receivers for receiving the $(N+M)$ optical signals from the wavelength separation filter, respectively, to output $(N+M)$ output signals; and

M differential combiners, each ~~[[for]]~~ differentially combining the output signals from two optical receivers receiving a pair of optical signals out of the $(N+M)$ optical receivers, to output one signal.

17. **(Original)** The receiving apparatus according to claim 16, further comprising a delay time controller for adjusting delay time difference between the pair of two optical signals on the optical transmission line, at the preceding stage of the differential combiner.

18. **(Previously Presented)** The wavelength multiplex transmission system according to claim 2, wherein the receiving apparatus adjusts a time difference between the reproduced differential signals.

19. **(Previously Presented)** The wavelength multiplex transmission system according to claim 5, wherein the receiving apparatus is further provided with a delay time controller for adjusting delay time difference between a pair of optical signals on the optical transmission line, at the preceding stage of the differential combiner.

20. **(Previously Presented)** The transmission apparatus according to claim 8, further comprising differential divider means for dividing an input signal to the differential signals.

21. **(Previously Presented)** The receiving apparatus according to claim 13, further comprising differential combining means for combining the reproduced differential signals.